

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (original) A layer 2 switch which conducts processing of terminating a layer 2 frame and processing of a layer 2 frame in which an expansion VLAN tag is stacked, comprising

a unit which, when a transmission destination area of said frame is different from a transmission source area, rewrites said expansion VLAN tag of said frame into an expansion VLAN tag of the transmission destination area.

2. (original) The layer 2 switch as set forth in claim 1, comprising

a first table which stores header information of said frame and information indicates from which area said frame is received so as to correspond with each other.

3. (original) The layer 2 switch as set forth in claim 2, wherein

said table includes a second table which stores information of said expansion VLAN tags of said transmission source area and said transmission destination area so as to

correspond with each other.

4. (original) The layer 2 switch as set forth in claim 1, comprising:

a first table which stores header information of said frame and information indicates from which area said frame is received so as to correspond with each other,

said table including a second table which stores information of said expansion VLAN tags of said transmission source area and said transmission destination area so as to correspond with each other, wherein

said first table is searched based on the header information of said frame and when the transmission destination area of said frame is different from the transmission source area, the expansion VLAN tag of the transmission destination area is obtained from said second table to rewrite the expansion VLAN tag of said frame.

5. (original) The layer 2 switch as set forth in claim 1, wherein

said layer 2 frame is an Ethernet frame.

6. (original) The layer 2 switch as set forth in claim 1, wherein

when a plurality of said expansion VLAN tags are

applied to said layer 2 frame, an expansion VLAN tag at the top or all the expansion VLAN tags are rewritten by said expansion VLAN tag of said transmission destination area.

7. (original) The layer 2 switch as set forth in claim 3, wherein

information of said expansion VLAN tags of said transmission source area and said transmission destination area so as to one-to-one correspond with each other is stored in said second table.

8. (original) The layer 2 switch as set forth in claim 1, comprising

a unit for one-to-one connecting LANs which handle said layer 2 frame to enable communication between LANs having the layer 2 frames whose kinds are different.

9. (original) The layer 2 switch as set forth in claim 8, wherein

information of said expansion VLAN tags of said transmission source area and said transmission destination area so as to one-to-one correspond with each other is stored in said second table.

10. (original) The layer 2 switch as set forth in claim

1, comprising

a unit for one-to-N connecting LANs which handle said layer 2 frame to enable communication between LANs having said layer 2 frames whose kinds are different.

11. (original) The layer 2 switch as set forth in claim 10, wherein

information of said expansion VLAN tags of said transmission source area and said transmission destination area so as to one-to-N correspond with each other is stored in said second table.

12. (original) The layer 2 switch as set forth in claim 1, comprising

a unit for N-to-N connecting LANs which handle said layer 2 frame to enable communication between LANs having said layer 2 frames whose kinds are different.

13. (original) The layer 2 switch as set forth in claim 12, wherein

information of said expansion VLAN tags of said transmission source area and said transmission destination area so as to N-to-N correspond with each other is stored in said second table.

14. (original) A method of termination processing of a layer 2 frame and of processing an expansion VLAN tag of a layer 2 frame in which an expansion VLAN tag is stacked, comprising the step of

rewriting, when a transmission destination area of said frame is different from a transmission source area, said expansion VLAN tag of said frame into an expansion VLAN tag of the transmission destination area.

15. (original) The method of processing an expansion VLAN tag of a layer 2 frame as set forth in claim 14, comprising:

a first table which stores header information of said frame and information indicates from which area said frame is received so as to correspond with each other,

said table including a second table which stores information of said expansion VLAN tags of said transmission source area and said transmission destination area so as to correspond with each other, wherein

said first table is searched based on the header information of said frame and when the transmission destination area of said frame is different from the transmission source area, the expansion VLAN tag of the transmission destination area is obtained from said second table to rewrite the expansion VLAN tag of said frame.

16. (original) The method of processing an expansion VLAN tag of a layer 2 frame as set forth in claim 14, wherein said layer 2 frame is an Ethernet frame.

17. (original) The method of processing an expansion VLAN tag of a layer 2 frame as set forth in claim 14, wherein when a plurality of said expansion VLAN tags are applied to said layer 2 frame, an expansion VLAN tag at the top or all the expansion VLAN tags are rewritten by said expansion VLAN tag of said transmission destination area.

18. (original) The method of processing an expansion VLAN tag of a layer 2 frame as set forth in claim 15, wherein storing information of said expansion VLAN tags of said transmission source area and said transmission destination area so as to one-to-one correspond with each other in said second table.

19. (original) The method of processing an expansion VLAN tag of a layer 2 frame as set forth in claim 14, comprising a unit for one-to-one connecting LANs which handle said layer 2 frame to enable communication between LANs having the layer 2 frames whose kinds are different.

20. (original) The method of processing an expansion

VLAN tag of a layer 2 frame as set forth in claim 19, wherein
storing information of said expansion VLAN tags of said
transmission source area and said transmission destination area
so as to one-to-one correspond with each other in said second
table.

21. (original) The method of processing an expansion
VLAN tag of a layer 2 frame as set forth in claim 14, comprising
a unit for one-to-N connecting LANs which handle said
layer 2 frame to enable communication between LANs having said
layer 2 frames whose kinds are different.

22. (original) The method of processing an expansion
VLAN tag of a layer 2 frame as set forth in claim 21, wherein
storing information of said expansion VLAN tags of said
transmission source area and said transmission destination area
so as to one-to-N correspond with each other in said second
table.

23. (original) The method of processing an expansion
VLAN tag of a layer 2 frame as set forth in claim 14, comprising
a unit for N-to-N connecting LANs which handle said
layer 2 frame to enable communication between LANs having said
layer 2 frames whose kinds are different.

24. (original) The method of processing an expansion VLAN tag of a layer 2 frame as set forth in claim 23, wherein storing information of said expansion VLAN tags of said transmission source area and said transmission destination area so as to N-to-N correspond with each other in said second table.

25. (new) A layer 2 switch connecting a first area network to a separate second area network, comprising:

an input for connection to a first area network of a wide area network to receive a layer 2 frame with an expansion VLAN tag of the first area network;

an output for connection to a separate, second area network of the wide area Ethernet network; and

a line card for i) terminating the received frame, ii) rewriting the expansion VLAN tag of the first area network into an expansion VLAN tag of the second area network, and iii) forwarding the frame with the expansion VLAN tag of the second area network from the output to the second area network.